

$$A = 44.8 \frac{\cancel{\text{mg}}}{\cancel{\text{L}}} \cdot \cancel{\text{sec}}$$

$$\frac{5 \cancel{\text{mg}}}{44.8 \frac{\cancel{\text{mg}} \cdot \cancel{\text{sec}}}{\text{L}}} \cdot \frac{60 \cancel{\text{sec}}}{\text{min}} = 6.7 \text{ L/min}$$

velocity
 $\frac{m}{sec.}$

~~sec.~~ $\frac{m}{sec}$

m
↑
position

sec.
time

Derivatives

m



m/s



position

velocity

$$\lim_{n \rightarrow \infty} \sum_{n=1}^{\infty} \text{base} \cdot f(x) =$$

to find the
area under the
curve

adding
an
infinite
number
of
rectangles

upper bound
lower bound

$$\int f(x) dx$$

Integration

Area under a curve

$$\int_1^5 2x \, dx = 24$$

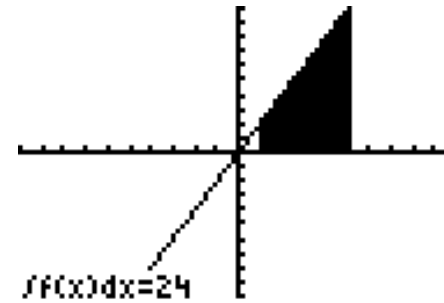


Trapezoid

$$A = \frac{1}{2} (b_1 + b_2) h$$

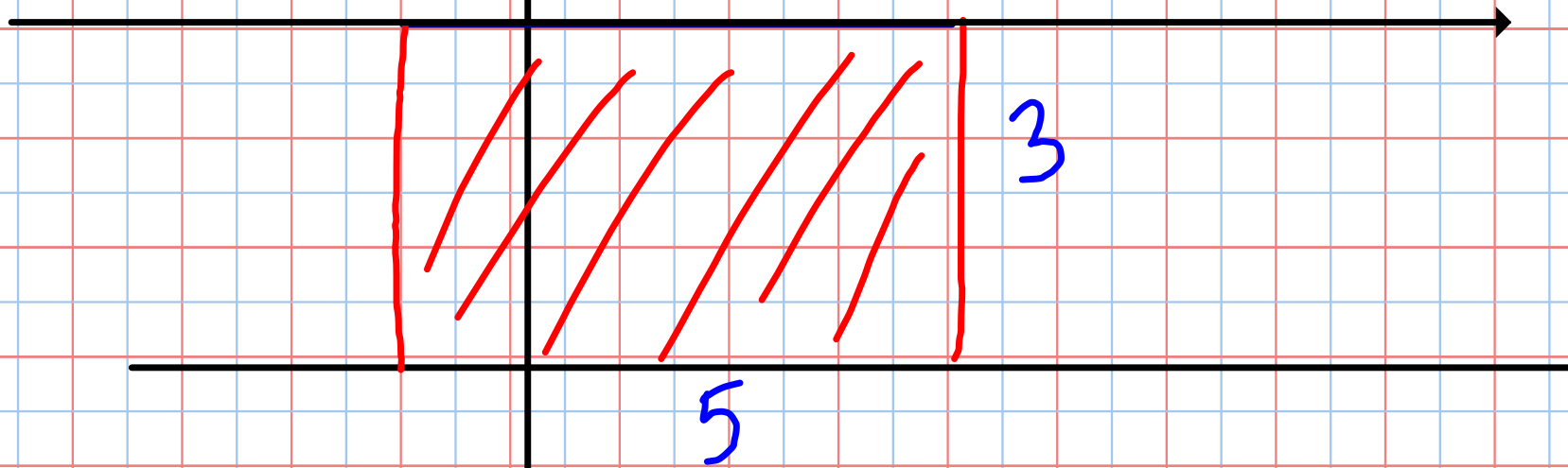
$$A = \frac{1}{2} (2 + 10) 4$$

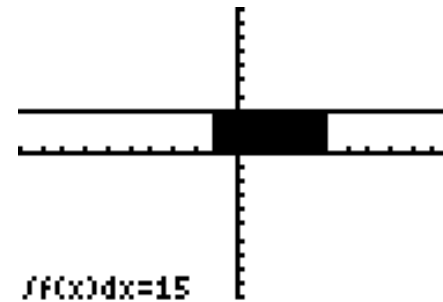
$$A = 24 \text{ sq. unit}$$



	Plot1	Plot2	Plot3
$\sqrt{y_1}$	$2x$		
$\sqrt{y_2}$			
$\sqrt{y_3}$			
$\sqrt{y_4}$			
$\sqrt{y_5}$			
$\sqrt{y_6}$			
$\sqrt{y_7}$			

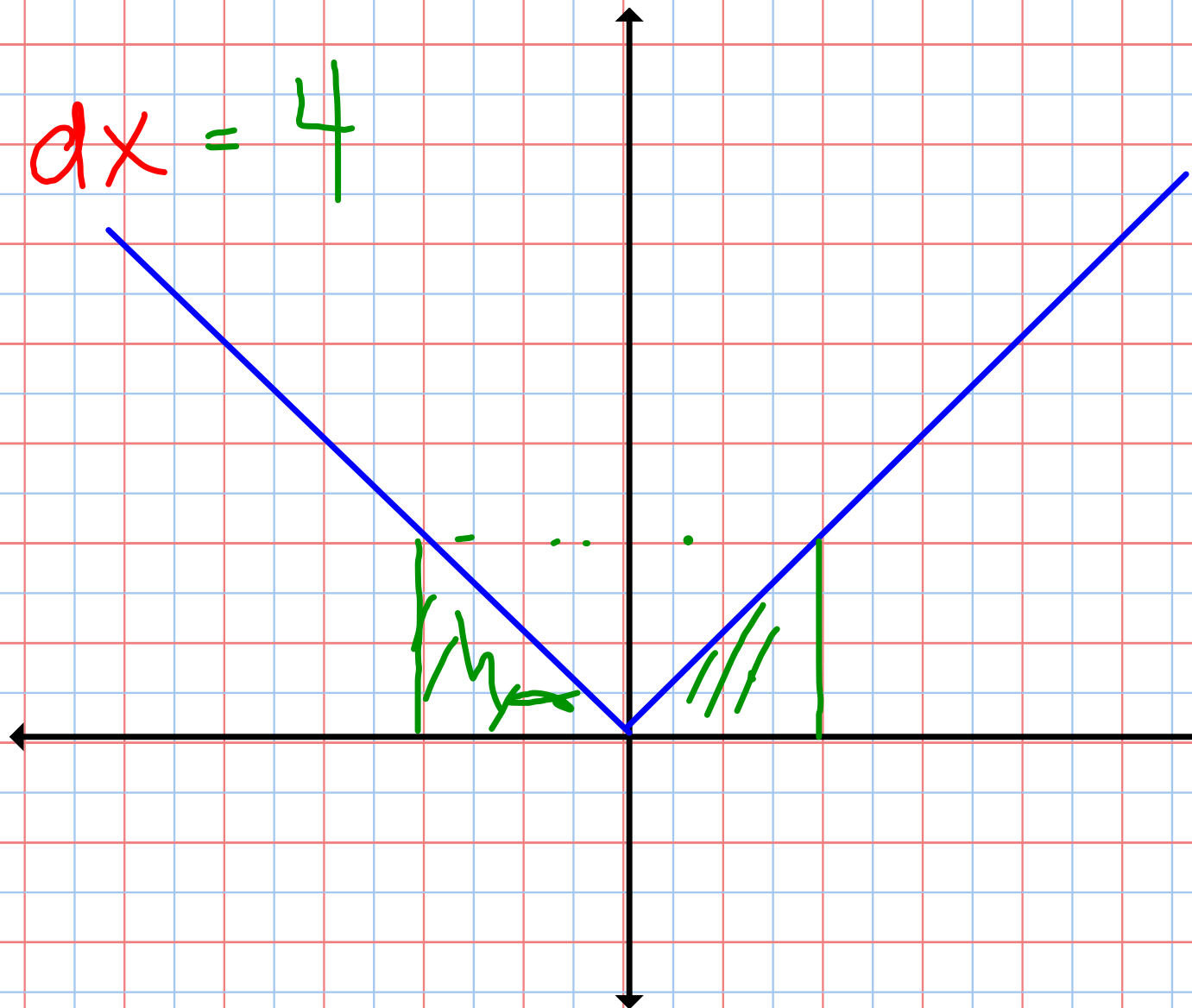
$$\int_{-1}^4 3 dx = 15$$





	Plot1	Plot2	Plot3
$\sqrt{Y_1}$	$\sqrt{3}$		
$\sqrt{Y_2}$			
$\sqrt{Y_3}$			
$\sqrt{Y_4}$			
$\sqrt{Y_5}$			
$\sqrt{Y_6}$			
$\sqrt{Y_7}$			

$$\int_{-2}^2 |x| dx = 4$$



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areas
under
curves